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Comments
on the Draft Environmental Impact Statement
on Essential Fish Habitat

by the

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presented to
National Marine Fisheries Service
Alaska Regional Office

April 15, 2004

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April 15, 2004

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Juneau, Alaska

Dr. James W. Balsiger
Alaska Regional Administrator
National Marine Fisheries Service
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Juneau, AK 99802-1668

Re: Comments on the Draft Environmental Impact Statement on Essential Fish Habitat

Dear Dr. Balsiger:

The Marine Conservation Alliance (MCA) is pleased to offer comments on the Essential Fish Habitat (EFH) Draft Environmental Impact Statement (DEIS) analysis and alternatives. The MCA is a broad-based coalition of coastal communities, fixed and mobile gear fishermen, Community Development Quota groups, vessel owners, processors, support industries and consumers directly and indirectly involved in the Alaska groundfish and shellfish fisheries off Alaska. The coalition members have joined together to support science-based policy that protects the marine environment and promotes long-term sustainability of both fishery resources and the North Pacific fishing community that depends on those resources.

The MCA supports the Preliminary Preferred Alternatives (PPA) selected by the North Pacific Fishery Management Council (NPFMC, or "Council") and the National Marine Fisheries Service (NMFS, or "Agency") for Action 1: Describe and Identify EFH; Action 2: Adopt an Approach for Identifying Habitat Areas of Particular Concern (HAPC); and Action 3: Minimize Adverse Effects of Fishing on EFH. The purpose of our comments is to identify issues and concerns regarding the analysis, and make recommendations to assist the Council and the Agency in strengthening the final document.

Before turning to our specific comments, the MCA would like to applaud the Agency and the Council for the diligent efforts put forward to meet the schedule set forth in the stipulation and court order from *AOC v. Daley*. The Council and the Agency have gone the extra mile in attempting to meet the demands of the plaintiffs for an aggressive schedule, even as those same plaintiffs attempted to fashion complex and unworkable alternatives. The MCA also wants to express appreciation for the extraordinary efforts of the personnel at the Alaska Fisheries Science Center for making

available in a timely fashion survey, catch, submersible dive, and other data for use by the public in developing HAPC proposals.

Over the years, the Council has taken proactive measures to protect habitat important to managed species. This was true prior to the passage of the Sustainable Fisheries Act (SFA), and continued following passage of the SFA as the Council worked to designate EFH/HAPCs and adopt mitigation measures. Unfortunately, litigation (*AOC v. Daley*) halted that effort while the Agency and Council worked on revised National Environmental Policy Act (NEPA) documentation. One of the effects of the stipulation and order resulting from that litigation was to put in place a compressed time frame to complete the EFH EIS process. The MCA recognizes the requirements of the stipulation and order, but believes strongly that the process to designate EFH, consider and possibly adopt measures to mitigate fishery impacts to EFH, and possibly designate HAPCs must be driven by sound scientific information and conducted pursuant to an open and transparent public process consistent with the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The Council and the Agency have succeeded in meeting the stipulation and order, and have maintained the integrity of the MSA decision-making process.

The following are the specific comments of MCA on the EFH DEIS and related matters.

GENERAL COMMENTS

Purpose and Need Statement

The purpose and need for the action is well-expressed in the Problem Statement adopted by the Council in December 2002, which states the Council intends to take action under the MSA to protect the productivity of Fishery Management Plan (FMP) species by considering possible measures to reduce any adverse effects of fishing on habitat essential to those FMP species. In compliance with the EFH provisions of the MSA, the DEIS analyzes a broad suite of alternative mitigation measures to determine both their efficacy in protecting EFH and their practicability for the affected fishing industry. The regulations require the Council to look at long-term and short-term costs and benefits of mitigation measures to EFH, fisheries, and the nation. 50 CFR 600.815(a)(2)(iii). The MSA and the regulations direct the Council to analyze potential benefits in the context of the productivity of the FMP managed species.

The purpose of the MSA is to promote conservation while managing the Nation's fisheries to achieve Optimum Yield, which, by definition, is to harvest that amount of fish that "will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational alternatives, and taking into account the protection of marine ecosystems." 16 U.S.C. 1802 (28). Productivity of the managed species is central to the overall goals of the MSA, and provides the setting within which to assess potential benefits to EFH of any mitigation measures. The MSA makes no provision for EFH outside of that setting, i.e., it

contains no mandate to protect EFH without the link to the core goal of ensuring productivity of managed species.

Range of Alternatives

The MCA believes the range of alternatives clearly meets NEPA requirements and should not be amended or changed. The Council and the Agency have taken extraordinary measures to consider and develop a reasonable set of alternatives for analysis in the DEIS. The list of alternatives has been revised and new alternatives incorporated several times during the course of this process, typically at the behest of the plaintiffs or related organizations. The Council's EFH Committee met many times to build and review alternatives, and the public has had numerous opportunities to recommend additional alternatives. The authors list eleven alternatives that were considered but rejected either because they were subsumed in the current active alternatives, were inconsistent with the legal requirements of the MSA, or were not practicable.

There may be renewed efforts by some commenting organizations or individuals to push for consideration of yet another alternative. MCA believes it would be a disservice to the public and to the regulatory process to add another alternative and necessitate further analysis after such an extensive and responsive public process.

Practicability

The MCA has two fundamental problems with the "Practicability" analysis and findings in the DEIS: 1) the propriety of a practicability determination in the absence of an adverse effects finding; and 2) the methodology and assumptions used in the authors' efforts to conduct a practicability analysis based on the long- and short-term costs and benefits of the proposed mitigation alternatives. Each of these is discussed below.[1]

1. The practicability findings are inappropriate in the absence of an adverse effects determination and should be eliminated from the analysis.

As noted above, the EFH provisions of the MSA require councils to engage in a multi-step process in determining whether or not to implement mitigation measures to protect EFH. The first of those steps is to identify EFH for the managed species under a council's jurisdiction. The second step is to determine whether or not fishing activities are adversely affecting such habitat and the productivity of managed species dependent on that habitat (i.e., if fishing

[1] *See*, comments on the DEIS submitted on behalf of the MCA by the Washington, D.C. law firm of Brand and Frulla (the "Frulla comments"). The Frulla comments, a copy of which is attached hereto as Attachment 1, address some of the legal issues associated with the EFH provisions of the MSA and the EFH Final Rule published by the NMFS in January of 2002. In particular, the Frulla comments address the nature and extent of the duty to mitigate "adverse affects" of fishing on EFH and the circumstances under which it is necessary and appropriate to make a "practicability" determination in connection with proposed mitigation measures.

activities having EFH impacts that are more than minimal and more than temporary). If it is determined that fishing activities are adversely affecting such habitat, the final steps in the EFH process involve the development and implementation of management measures designed to mitigate such impacts "to the extent practicable."

This is a sequential process, with each step building on the previous one. The practicability determination is the last step in the process. It involves a comparison of the benefits expected from a potential mitigation measure (e.g., the degree to which the proposed measure mitigates one or more of the adverse impacts on EFH identified in step two) with the socio-economic costs such a mitigation measure would impose on fishermen, fishing dependent communities, and the Nation as a whole. Although no formal cost/benefit analyses is required, Section 600.815 (a)(2)(v) of the EFH Final Rule identifies the issues to be considered in connection with a practicability determination:

> "(iii) Practicability. In determining whether it is practicable to minimize an adverse effect from fishing, Councils should consider the nature and extent of the adverse effect on EFH and the long and short-term costs and benefits of potential management measures to EFH, associated fisheries, and the nation, consistent with national standard #7 (the requirement to minimize costs and avoid unnecessary duplication)."

As contemplated by the EFH rule, the requirement for a practicability determination necessarily arises from the need to mitigate an identifiable adverse effect. Absent an adverse effect finding, no mitigation requirement is triggered and no practicability analysis is required or appropriate. Indeed, under such circumstances, a meaningful practicability analysis would be virtually impossible to conduct, because there are no identifiable benefits against which to measure the costs associated with the potential mitigation alternatives (*See,* Frulla comments, p.6).

The current DEIS identifies a preferred definition of EFH as required by the EFH provisions of the MSA. The DEIS analysis then goes on to determine that none of the fishing activities in the North Pacific groundfish fisheries has more than a minimal and more than a temporary impact on the identified habitat (p. 4-388). In so finding, the DEIS notes that "based upon the best available scientific information, existing habitat conservation measures appear sufficient to sustain FMP stocks at present abundance levels" (*See*, table 3.9-1 of the DEIS). In other words, according to the DEIS, the current level of fishing in the BSAI and GOA groundfish fisheries is not "adversely affecting" EFH as that term is used in the MSA and in the EFH Final Rule.

The DEIS also examines alternative ways in which potential adverse effects to the habitat might be mitigated, but concludes such measures are not warranted, due to the lack of evidence of adverse effects caused by fishing operations. Under the procedures specified in the final rule,

the "no adverse effects" finding should have been the end of the inquiry.[2] But the DEIS analysis goes further and gratuitously determines all but one of the proposed mitigation measures represent practicable ways of mitigating the adverse effects of fishing (of which there are none). This is nonsensical and makes a mockery of the cost/benefit considerations specified in the final rule. For this reason, a finding of adverse effects serves as "a necessary precondition" to a practicability analysis. As explained in the Frulla comments (p. 7):

> "In the case of the instant Draft EIS, the finding is one of no adverse impact by any of the fishing gears in the management units. Draft EIS at 4-388, § 4.5.3.1.1, (stating that "current fishing activities affect EFH in a manner that is minimal and temporary in nature"). In the face of such a definitive finding, it appears that if any of the habitat closure options were chosen they could be found to be in violation of the MSA under the authority of *Hadaja*, cited above. It would be equally difficult to support a finding that any such measures are practicable within the meaning of the law when their mitigating effects would have no demonstrable benefit for EFH of managed species. Indeed, NMFS regulations specifically reserve closures only to address significant adverse impacts."

For these reasons, and in the absence of an adverse effects determination, the MCA believes it was inappropriate for the DEIS to conclude that any of the mitigation measures discussed in the analysis were practicable, and such findings should be deleted from the document.

Recommendation: Eliminate the practicability findings associated with mitigation alternative nos. 2-5.

2. The assumptions used and the methodology employed in connection with the practicability findings are flawed and lead to an underestimate of the costs associated with the various mitigation alternatives under consideration.

As noted above, the MSA requires any management measures taken to protect EFH be practicable, and it directs the Council to consider long- and short-term costs and benefits of protecting EFH for the conservation of managed species to the Nation, the industry, and dependent communities. Although a formal cost-benefit analysis is not required, the EFH Regulations do require a balancing of costs and benefits. That balancing requirement is in the regulatory provision requiring a determination of practicability. 50 CFR 600.815(a)(2)(iii). If the costs are significant and benefits speculative or unknown, then the relevant mitigation

[2] 50 CFR 600.815 (a)(2)(v)(ii), "Minimizing adverse effects", provides in pertinent part as follows: "**if there is evidence that a fishing activity adversely affects EFH in a manner that is more than minimal and not temporary in nature**....**FMPs should identify a range of potential new actions that could be taken to address adverse effects on EFH, include an analysis of the practicability of potential new actions, and adopt any new measures that are necessary and practicable.**" (emphasis added). By the language of the rule itself, the requirement to conduct a practicability analysis is predicated on a finding of adverse impacts.

measures are deemed not practicable. The underlying purpose and intent of the practicability test is explained at page 6 of the Frulla comments:

> "The practicability requirement is designed specifically to insure that certain economic harm and reductions in the ability to harvest optimal yield from a fishery are not blithely foregone in a trade for speculative benefits to habitat. Costs and benefits must be weighed as precisely as possible, and if the cost of a particular measure is certain to be high (such as taking productive fishing grounds out of the fishery or mandating that vessels switch gear), and the benefits uncertain in light of the best scientific information, that measure is **not** practicable within the meaning of the law."

The DEIS analysis is weak on defining and analyzing the relative practicability between alternatives. There is no formal cost/benefit analysis, and the discussion is qualitative and fairly subjective in nature. Given the conclusion by NMFS scientists, expressed in a memorandum dated September 10, 2003 and in this DEIS, that no fishing effects on EFH are more than minimal and temporary, the only logical conclusion is none of the proposed mitigation measures are practicable. If no benefits exist on one side of the scale, by definition, the costs side of the scale will be greater. Inexplicably, the DEIS concludes just the opposite – that all of the alternatives except Alternative Six are practicable.

Part of the difficulty lies in the analysis in Appendix C, which attempts to examine costs associated with the alternatives. These problems are compounded by deficiencies in Chapter 4, which we discuss later.

The MCA finds several significant flaws in the Appendix C analysis, which are discussed here in the context of practicability, and also in more detail under our comments on the environmental effects analysis. MCA is particularly concerned by the statement in Chapter 4 (pp. 4-388-389) that the Agency has not yet chosen a methodology to determine practicability. Without a methodology being chosen, the MCA does not understand how the conclusions on practicability could be reached.

In actuality, Appendix C identifies few possible benefits from the EFH alternatives in either a quantitative or qualitative manner. While in a few places, the analysis speculates as to some potential benefit from the alternatives that might be measured through non-market valuation techniques, such as "passive use" or "differed use" values, it concedes these benefits are theoretical and no such estimates are actually available. For the most part, the analysis of each alternative states the proposed mitigation measures are assumed to have benefit to EFH because the Council selected them as alternative mitigation measures. This circular approach to analyzing benefits is illustrated in the Appendix C's description of the potential habitat protection benefits associated with the EFH alternatives in Table 3.9-1, which concludes:

> "It is uncertain whether EFH protections under this alternative would result in increased yield of any FMP species, although EFH provisions in MSA presuppose this outcome. All other EFH use values under this alternative are unknown."

Certainly, the Council selected the different mitigation measures with some expectation there might be benefits to EFH and managed species if fishery impact were more than minimal and temporary, but there was an even greater expectation the analysis would answer the question more definitively. In fact, the force driving the choice for some of the alternatives was meeting NEPA requirements and, in this case, perhaps going well beyond the requirement to look at all reasonable alternatives. The Agency's memorandum recommends no mitigation measures be implemented since none of the effects of fishing on EFH are found to be more than minimal and temporary. Consequently, the benefits to EFH are non-existent under the regulatory standard – not positive benefits as is assumed in some places within Appendix C and in several sections of Chapter 4's assessment of effects, discussed in detail below.

Appendix C also assumes fishing is "consuming habitat" in economic terms, while the Agency finds there is no adverse effect on EFH in regulatory terms. Appendix C and Chapter 4 speculate reducing habitat "consumption" will produce greater long-term benefits, and thus, starts with a second presumption not supported by the analysis. The analysis of EFH benefits in the DEIS makes no such finding. To further complicate matters, Appendix C also offers an internally contradictory perspective on the issue of whether the alternatives actually create benefits. Consider on p. C-23 the analysis concludes:

> "An expectation of substantial recoveries, directly attributable to measures to minimize effects of fishing on EFH would require presence of a species with a clear habitat limitation and consequent poor stock condition. Alaska fisheries include no such clear cases. Therefore, no quantifiable or even qualitative measure of sustained or increased yield in production or biomass of FMP species is available for this analysis. That is, based on currently available data and understanding of these fishery and habitat resources, it is not possible to measure any economic benefits linked to the biological or ecological changes attributable to the proposed EFH actions."

Even more puzzling, on p. C-20, the DEIS "quotes" the MSA to state that EFH conservation will lead to more robust fisheries. It goes on to assume the MSA also states minimizing damage to EFH from fishing practices will sustain or even increase production and yield from FMP-managed species and "other species important to the fishing industry in Alaska…." The MSA makes no such finding that EFH conservation will lead to more robust fisheries or that minimizing damage to EFH will sustain or increase productivity, and the reference to "other" non-FMP species is largely irrelevant to EFH. The assumptions stated on p. C-20 are circular and ignore the linkages necessary to determine habitat is EFH. If the Council finds a particular habitat performs an essential function that supports productivity for an FMP-managed species, and if the Council finds fishing is having an adverse effect on that habitat, and if the Council finds the adverse effect is more than minimal and temporary, then the Council

should consider mitigation alternatives. Only after those linkages are demonstrated can the conclusion be justified that EFH protection will lead to more robust fisheries and increased productivity. Assuming that conclusion before performing the analysis is a flawed process.

Other aspects of Appendix C's cursory analysis of benefits and costs are equally problematic. Appendix C's commentary on the six mitigation alternatives fails to provide any method of balancing or measuring benefits vs. costs, and provides no metric to measure benefits or to compare benefits to costs. The Appendix C analysis determines the amount of fishing revenue "at risk" by comparing the amount of catch from an area that would be closed to the total catch in that fishery, and then measuring "at risk" revenue in the same proportion. The authors assume much of the fishing operation can be moved to another area or that fishing vessels can switch to other gear types to avoid a restriction, both highly questionable assumptions. Appendix C makes no attempt to analyze other closures and restrictions that apply in the North Pacific, which make a shift of effort from one area to another difficult. Existing closures are extensive and limiting to most vessels. For example, Appendix C ignores the regulatory restrictions that prevent a trawler from shifting from trawl gear to pot gear. License Limitation Program (LLP) requirements make that shift impossible if the vessel is not already designated for both types of gear. Few vessels are so designated because of increasing restrictions from rationalization. Appendix C also makes a determination of "fishable area" so it can compare the amount of area that would be closed to the amount of area that would be available. The method for determining areas to be "fishable" is not stated. If it simply includes every area where any groundfish have been caught, the analysis fails to determine that all such areas are actually fishable for large amounts of groundfish.

Finally, the DEIS concludes, on p. 4-391, all of the alternatives are practicable, except for Alternative Six. This conclusion is stated on the same page in which the DEIS says none of the fishing effects are more than minimal and temporary, i.e., no benefits would be achieved under the regulatory structure of EFH protection. The conclusion of practicability is made without any balancing of costs and benefits, in violation of the EFH Regulations which specifically require a balancing, without the choice of any metric to measure benefits against costs, and without a choice as to the method of determining practicability (pp. 4-388 & 389). The conclusion is simply not supported by the analysis.

Recommendation: Revise the analysis to address the analytical and methodological shortcomings identified above.

The Relationship of the EFH DEIS Analysis to the PSEIS

The MCA is deeply concerned about the discussion in Section 4.5.4, whose stated purpose is to explain the difference in methods and focus between habitat analyses in the EFH EIS and the groundfish Programmatic Supplemental Environmental Impact Statement (PSEIS). Unfortunately, the discussion is more a justification for the PSEIS approach than a description of why, in the context of the broad programmatic level review in the PSEIS, a qualitative and fairly

subjective analysis is acceptable, whereas in an FMP-level review such as this EFH DEIS a more rigorous, data-driven, and qualitative approach is warranted.

Simply stated, the most important difference is the PSEIS focuses broadly on habitat effects of fishing in the context of the condition of habitat itself, while the EFH DEIS is directly concerned with how effects of fishing may influence the ability of EFH to sustain populations of FMP species at key life stages. A generalized approach may be acceptable under a programmatic level review, but quite unacceptable in the context developing specific regulations for EFH identification and mitigation.

The EFH DEIS employs a quantitative model (which analysts admit is data poor in some parameters) that attempts to balance estimated fishing effects on habitat against recovery of habitat. This tradeoff between effect and recovery is estimated at a theoretical long run equilibrium condition. Additionally, EFH DEIS model results are linked to a threshold benchmark for the viability of habitat for managed species sustainability – Minimum Stock Size Threshold (MSST) – a stock abundance criterion created by the latest NMFS overfishing Final Rule. To explain its approach to assessing habitat effects of fishing, the PSEIS refers to the use of an earlier version of the Rose-Fujioka quantitative model, but essentially dismisses the relevance of the quantitative habitat effects model in favor of qualitative findings based mostly on two pieces of information: 1) the amount of area and type of habitats in existing closed areas; and 2) the spatial distribution of bottom trawl closures relative to fishing intensity and habitat types. Of course, the type, amount, and distribution of habitats in the existing 130,000 plus square nautical miles of closures is largely unknown, so the results are largely the personal views of the authors.

Key to understanding the discussion in Section 4.5.4 is at least a basic understanding of what is meant by Type II error. The issue of hypothesis testing comes into play because the DEIS states the PSEIS habitat section adopted a very different approach in lieu of a standard scientific approach to hypothesis testing. The intent of the alternative approach to hypothesis testing is to avoid "Type I error" in order to be more precautionary. The DEIS explains this different approach as: "Reducing the probability of making a Type II error is more precautionary and is more responsive to both the EFH mandates and the public comment received on the 2001 PSEIS (p. 4-401)." This statement is remarkable in that it incorrectly portrays the DEIS analysis as being less responsive to EFH mandates than the PSEIS, is inconsistent with other parts of the discussion, and confuses the role of public comment on the two very different analyses.

For example, while the DEIS asserts that the PSEIS approach is more responsive to the EFH rule (p. 4-401), it later reverses itself and states the EFH DEIS is actually responsive to the EFH rule and the PSEIS was aimed at an assessment of the condition of habitat itself without regard to the EFH mandate (pp. 4-402-403): "While the PSEIS baseline evaluation identified areas of concern regarding the current state of habitat effects of fishing, the EFH EIS was designed to address specific criteria in the EFH final rule. While identifying areas of concern was one step in the EFH EIS, the purpose of the analysis was to evaluate whether fishing had

negative effects on EFH of managed species that were more than minimal and temporary." This latter statement appears consistent with the differences between the PSEIS and the EFH DEIS. The former statement of how what is effectively a hyper-precautionary approach is more responsive to the EFH mandate is incorrect and misleading.

Another example is the description of how ecosystem considerations are incorporated into the analyses. The PSEIS is described as targeting differences in "ecosystem structure and function" and "broader than the consideration of the effects on commercially important and functionally dependent fish species (p. 4-401)." While the PSEIS certainly speculates about these issues, in reality it is a collection of a set of subjective, precautionary, qualitative judgments by the authors that are both speculative and unsupported. The description of the scope of the EFH DEIS analysis is: "The analyses consider adverse effects of fishing on benthic marine habitat from the perspective of managed fish species that are dependent on certain qualities and features of that habitat. As such, the scope of this work (EFH DEIS) is narrower than a consideration of these changes on the scale of entire marine ecosystems (as pursued in the PSEIS, for example)." The above statement of the methods used for the EFH EIS downplays the fact that the EFH EIS model looked at dependencies of managed species and qualities and features of their habitat in a rigorous quantitative framework. It also ignores the cumulative effects analysis, the analysis of impacts on forage species, and the analysis of impacts on endangered or threatened species in the DEIS, all of which contribute to an ecosystem perspective on the effects of the various alternatives.

The PSEIS admits that data on distribution and abundance of habitat types are sketchy or missing, that life history of living habitat and recovery rates are not available, and the same is true for basic information and rates of natural processes that affect habitat. Despite this admission, the PSEIS habitat analysis freely speculates as to the current condition of habitat and makes a case that habitat is "conditionally significantly adversely" affected by fishing, especially in areas where fishing is concentrated because habitat might be especially important or of exceptionally high function in those areas. The PSEIS' strong determinations on these matters are not consistent with what we know about the status of groundfish stocks and other related stocks including non-commercial species. If fishing activities negatively impacted those areas presently being heavily fished, we would expect, in turn, to see that reflected in the condition of the managed species. Instead, we see robust stocks in most cases. Perhaps that is because the Council has already taken so many proactive steps to protect habitat important to managed species, including closing over 130,000 square nautical miles to some types of fishing activity. These closures certainly have benefits for a broad spectrum of habitats and the species that reside there, including both managed species and non-commercial species.

Given there is actually no accepted scientific or other definition of what an "ecosystem approach" actually constitutes, it is debatable whether the PSEIS qualitative ecosystem-sounding language or the EFH DEIS' attempt to actually model dependencies between habitat and critical life stages of managed species is more or less of an ecosystem approach. An honest assessment of the two approaches would say the EFH DEIS model is a data limited but good-faith attempt to

employ applied science that honestly acknowledges where there are admitted shortcomings in the data and analytical techniques. The approaches in the two analyses are principally different because the PSEIS adopts a hyper-precautionary approach to evaluating the relationship of fishing effects to habitat, and the DEIS uses a standard approach to scientific precaution through hypothesis testing, presents a fully-specified quantitative model, explains data deficiencies, and focuses on relationships of habitat effects of fishing to managed species. At the risk of being repetitive, the approach used in the PSEIS is only acceptable in a broad, policy level programmatic review such as the PSEIS, and would not be appropriate for developing detailed management plans and regulations. It certainly should not be portrayed as being more responsive than the analysis in the DEIS to the legal mandates of the MSA.

Recommendation: Eliminate the statement on p. 4-401 "Reducing the probability of making a Type II error is more precautionary and is more responsive to both the EFH mandates and the public comment received on the 2001 PSEIS" and modify the text to more accurately reflect the differences between the mandates of the two analyses, and the appropriate response to those differing mandates.

COMMENTS REGARDING THE PRELIMINARY PREFERRED ALTERNATIVES

The MCA Supports the PPA (Alternative 3, Revised General Distribution) for Action 1: Describe and Identify EFH

The MCA believes the analysis in the DEIS presents a strong case for the PPA as a reasonable approach to identifying and designating EFH, and supports adopting the PPA as the preferred alternative with one addition. During the course of the parallel process to identify and designate HAPCs, it came to our attention that certain seamounts should be considered for designation as EFH. This is necessary in order for them to also be designated as HAPCs. MCA supports designation of these seamounts as EFH in order to facilitate them also being designated as HAPCs, with mitigation measures adopted through the HAPC process as appropriate. Supplemental information in support of these designations is included as Attachment 2.

The MCA Supports the PPA (Alternative 3, Site Based Concept) for Action 2: Adopt an Approach for Identifying HAPCs

The MCA supports Alternative 3 as the PPA to describe approaches to identify HAPCs. This alternative would allow the Council to adopt an approach which would permit specific sites within EFH to be selected to address a particular problem, and identified as HAPC. This alternative allows the Council to focus conservation measures on more specific locations, and to mitigate for specified impacts.

The NMFS recommends Alternative 4, which calls for identification of types of habitat with a potential need for added protection, then identification of sites within those types. While

this approach would form a basis for the identification process, MCA fears that it could also be too limiting (similar to the problem with the designations for named seamounts mentioned above). For example, in the future we may have added information about habitats and their functions, and may be able to identify certain sites with both a high level of importance and a high probability of being affected. If those sites were not within the types identified as HAPC-process types, they may go unprotected. The MCA believes the site approach guarantees more long-term flexibility for the establishment of any required protection.

In addition, the Council has initiated efforts to identify and designate HAPCs, which are on a parallel track with the EFH designation process. The HAPC process the Council is using draws heavily on the process outlined in this DEIS. The Plan Team was heavily involved in the review of the proposals received, and has identified several concerns and problems with the HAPC review process which MCA believes need to be addressed. However, the next cycle for HAPC designations would be three or so years from now, so there should be ample opportunity to refine the process to make it more effective and efficient, drawing on the lessons learned from this round, including the issues and concerns raised by the Plan Teams. The MCA recommends the analysis clearly indicate the HAPC process identified in the DEIS may be modified in the future.

The MCA Supports the PPA (Alternative 1, Status Quo) for Action 3: Alternatives to Minimize the Adverse Effects of Fishing on EFH

The MCA believes the analysis strongly supports the PPA for Action 3. The choice of Alternative 1 as the PPA for Action 3 should not be interpreted to mean the Council and the Agency are ignoring habitat concerns. To the contrary, these findings recognize significant actions taken to protect habitat, address ecosystem considerations, and promote the continued sustainability of managed species. And, while these actions have come at a steep price to industry in terms of lost fishing grounds or closures of fisheries, they have also been a key component of one of the most successful fishery management regimes in the nation.

Similarly, the MCA continues to support adopting reasonable measures, which address known concerns, to protect habitat important to managed species. In supporting the PPA for Action 3, the MCA is also supporting using the HAPC process to identify discrete sites for consideration as needing additional protection. The MCA believes, through the development of specific HAPC protection measures, the Council and the Agency can take a more focused approach to habitat issues, and more effectively use the best scientific information available to protect fragile and rare habitats that contribute to the productivity of managed species. This is the approach which the analysis in the DEIS most strongly supports.

The DEIS analyzes six alternatives to minimize to the extent practicable the adverse effects of fishing on EFH if determined to be more than minimal and more than temporary. Appendix B evaluates the effects of all North Pacific fisheries on EFH in Alaska, and concludes no Council-managed fishing activities have more than minimal and more than temporary effects

on EFH for any of the FMP species. Additionally, the analysis concludes the cumulative impact of all fishing activities combined have minimal, but not necessarily temporary, effects on EFH. Importantly, it concludes additional mitigation measures appear unnecessary, based on existing management measures that directly or indirectly mitigate fishing impacts, and the determination that all groundfish species are harvested at sustainable levels in the North Pacific.

The Analysis Correctly Supports the Council PPA choice on EFH Mitigation

In July 2002, the Ocean Studies Board of the National Academy of Sciences (NAS) released their report "Effects of Trawling and Dredging on Seafloor Habitat." The report notes several important characteristics of the Alaska bottom trawl fisheries relative to fishing effort. Bottom trawling occurs on less than half of the Alaska shelf. Of the areas fished, the intensity of bottom trawling is relatively low. Total bottom trawling (measured in number of tows) has declined significantly off Alaska during the 1990s, with a 30% reduction in the Bering Sea (BS), a 50% reduction in the Gulf of Alaska (GOA), and a 33 % reduction in the Aleutian Islands (AI). According to the NAS report, compared to the rest of the United States, the continental shelf off Alaska is subjected to relatively low bottom trawl effort.

The NAS report recommended management of the effects of trawling and dredging should be tailored to the specific requirements of the habitat and the fishery through a balanced combination of the following management tools: 1) fishing effort reduction; 2) modification of gear design and gear type; and 3) establishment of areas closed to fishing. These management tools have been employed in many of the Alaska fisheries, as discussed below.

Past Actions by the Council and Agency to Protect Habitat

The EFH DEIS correctly notes efforts to integrate habitat considerations into fishery management go back to the original MSA in 1976. In 1983, NMFS adopted a National Habitat Conservation Policy, uniting its MSA authority with its advisory responsibilities. The NMFS habitat policy was incorporated into the Alaska Region's FMPs through Bering Sea and Aleutian Islands (BSAI) FMP Amendment 9 and GOA Groundfish FMP Amendment 14. Since that time, the Council and NMFS have enacted specific measures that were designed, in part, to protect habitat from potential negative impacts from fisheries. These measures include gear restrictions, time and area closures, and harvest restrictions. Of these, the most widely used is closure of areas to certain gear types. This, in effect, creates a type of Marine Protected Area. Specific past measures implemented in the North Pacific include the following:

1. Current Fishing Equipment Restrictions:

The Council and NMFS have implemented several restrictions to fishing equipment, primarily to reduce bycatch, but these measures have had important benefits of reducing effects on EFH. The analysis correctly notes such restrictions include pelagic trawl requirements for the BSAI pollock fishery, scallop and dredge use limitations, pot size limitations in crab and

groundfish fisheries, and allowable gear definitions which prohibit the use of unlisted gear types such as gillnets, explosives, chemicals, or other gears that could have adverse impacts on EFH.

2. Current Marine Protected Areas and Marine Managed Areas:

Marine Protected and/or Managed Areas can be used to preserve or restore fish habitats. Establishing areas closed to particular gear types is a common tool used in fishery management to protect benthic habitat from adverse impacts. It is specifically cited in the EFH EIS and noted in the NAS report as an effective mitigation tool. Over the years, the Council, NMFS and the Alaska Board of Fisheries have adopted numerous area closures to protect habitat for fish, crabs, and marine mammals. These closed areas exceed 130,000 square nautical miles -- a size twice that of the entire Georges Bank or equal to the state of Indiana. These closures include the Pribilof Islands Habitat Conservation Area, the Bristol Bay Trawl Closure Area, the Red King Crab Savings Area, the Kodiak Trawl Closure Areas, the Southeast Alaska Trawl Prohibition, the Cook Inlet Trawl Closure Area, the Sitka Pinnacles Marine Reserves, the Steller sea lion and Walrus Islands Closure Areas, Seasonal Groundfish Closures Areas, Scallop Dredge Closure Areas, and State Waters Trawl and Dredge Closure Areas.

3. Current Harvest Limits:

The regulations for managing adverse effects on EFH from fishing note fishery management actions to mitigate effects may include limits on the take of species. The analysis correctly notes that limits currently in place include tightly controlled catch limits for target species and protected species, optimum yield limits capping the GOA at 800,000 metric tons (mt) and the BSAI at 2 million mt of groundfish removals, and a prohibition on development of a forage fish fishery. The analysis concludes all of these management measures reduce the intensity of fishing effort and, therefore, effects on benthic habitat, as noted in the NAS report.

4. Current Effort Reduction and Limitation:

The effects of fishing on fish habitat depend to some extent on the amount and intensity of fishing effort. Because fishing effort appears to have been controlled with existing catch limits and fishing effort reduction measures, additional measures to directly reduce fishing effort were thought to be neither reasonable nor practicable as tools to reduce the effects of fishing on EFH and so, were not included in the suite of alternatives. In addition to conservative catch limits, there are several effort limitation measures already in place for groundfish, crab, and scallop fisheries, which further reduce intensity of fishing effort and gear impact to benthic habitat. Although habitat protection was not the rationale used in development of these programs, the analysis concludes limiting effort does benefit habitat. Those programs include groundfish and crab moratoria, scallop vessel moratorium, groundfish and crab LLPs and the scallop LLP.

5. Current Fishery Rationalization Programs:

The EFH EIS correctly concludes rationalization of excess fishing capacity can reduce impacts to fish habitat. The NAS report noted, "The establishment of some form of rights-based management program is one approach for meaningful and permanent reduction of fishing effort." The Council and NMFS have implemented rationalization programs for some fisheries already,

and other programs are under development, including for the BSAI crab fishery, GOA groundfish fisheries, and BSAI non-pollock species. Existing rationalization programs include the halibut and sablefish Individual Fishing Quota (IFQ) program, the Community Development Quota (CDQ) groundfish and crab programs, and the American Fisheries Act (AFA), which rationalized the BSAI pollock fishery.

Additional Alternatives for EFH Mitigation

In its recommendations to the Council on potential EFH actions, NMFS notes uncertainty remains regarding application of the fishery impacts model to the EFH analysis. Nonetheless, the model is based upon the best scientific information available and, as discussed elsewhere in these comments, its application overestimates the effects of fishing because of the precautionary assumptions used in the model.

NMFS has recommended the Council consider additional precautionary options that could be taken to protect deep-water coral communities even though fishery impacts have been determined to be minimal and temporary. One action would be for the Council to prohibit bottom-contact trawling in the lower slope/basin areas deeper than 1000 meters. The agency seems to believe such a measure might protect habitats from future impacts with almost no short-term costs. This could be done either by endorsing one of the existing alternatives that includes this proposed closure, or identifying specific lower slope/basin closures to be analyzed separately from other measures in a distinct new alternative. This would require adding a new alternative to the EIS, which seems inappropriate at this late date, especially since analysis shows fishery effects on habitat to be minimal and temporary.

Recommendation: Drop the proposal to prohibit bottom-contact in lower slope/basin areas deeper than 1000 meters. There are no data to support what appears to be a new alternative, which seems especially unnecessary since the fishery impacts model has determined impacts are temporary and minimal. Additionally, the proposed new alternative does not seem designed to protect the habitat of managed species from identifiable effects caused by fishing and so does not address the Council's problem statement. Further, little is known about these deep basin areas, so scientific data used to analyze this alternative would likely be very limited and do little to increase certainty about the efficacy of this overly precautionary approach.

However, the MCA wants to again emphasize that we are not backing away from a precautionary approach in the protection of habitat. In supporting the Council's PPA, the MCA acknowledges and supports the continuation of the protective measures cited above. And, importantly, MCA supports using the HAPC process to identify discrete sites deserving special consideration for habitat protection.

Dr. James W. Balsiger
April 15, 2004

COMMENTS ON THE ENVIRONMENTAL EFFECTS ANALYSIS

Chapter 4: Environmental Consequences of the Alternatives

Chapter 4 of the DEIS attempts to describe and compare various types of effects of the proposed EFH mitigation alternatives covering a diverse range of considerations and concerns. This range covers such things as annual revenue forfeitures (in terms of annual "revenues at risk" to fishermen, processors, and communities), effects on safety, effects on management costs, non-consumptive (passive use) or differed consumption benefits effects, expected benefits to the environment (ecosystem function, habitat complexity, and benthic biodiversity), effects on populations of managed species, and effects on adjacent fisheries. This attempt to evaluate such a diverse set of potential effects draws baseline findings from the technical components of the EIS such as the fishing effects model (Appendix B) and the Environmental Assessment/Regulatory Impact Review (EA/RIR). Tables in the Executive Summary and Chapter 4 report the expected direction and magnitude of these estimated effects for each mitigation alternative based on the determinations made in Chapter 4. As such, the DEIS' conclusions are essentially established in Chapter 4.

While we think an EIS analysis should attempt to describe and compare different expected effects to help the public evaluate the implications of different alternatives, we have many concerns over the methods employed for Chapter 4, including the basis for determinations of positive effects for indices of habitat condition such as "benthic biodiversity," assumptions made for those determinations, and the numerous apparent inconsistencies in the application of methods to evaluate and rate effects on habitat condition. Prior to addressing those specific points, we would like to make a few general comments about the utility of Chapter 4's assessment of effects.

Tables ES-6 and ES-7 are based on Chapter 4's analysis of inherently disparate types of effects of the proposed alternatives. These tables indicate the direction and magnitude effects (E+, E-, 0, and U) in a matrix of EFH mitigation alternatives on the X axis and six different categories of effects further divided into 28 actual types of effect on the Y axis. While these tables attempt to organize and summarize Chapter 4's discussion of expected effects, the problem here is not the organization or presentation of the analytical results, but the issues we have about how these ratings of effects were constructed and the near incomprehensibility of comparisons of very different types of effect outcomes.

The issue of how determinations were made regarding habitat complexity and biodiversity is discussed at length below. Regarding the problem with interpreting comparisons between types of effects and across the alternatives, one reason for the difficulty making comparisons is that the effects are presented with inherently different units and metrics. For instance, it is unclear how the reader can make sense of a comparison between two alternatives when one might have a negative effect on safety at sea, while the other might have a positive

effect on safety but a negative effect on populations of sea birds and a negative expected effect on "benthic biodiversity."

Some of the types of effects are actually estimated quantitatively, such as revenues at risk and long-term equilibrium impacts (LEI), while others are purely qualitative, such as "diversity." Some might think that this automatically puts a lower value on the qualitative index of effect. Others may feel the qualitative rating is more powerful because the quantitative is essentially a discrete integer while the qualitative rating can be as strong as one wants.

Likewise, there are categories of benefit corresponding very closely to the evaluation approach used in Appendices B and C which links the effects of alternatives to the productivity of managed species. Yet other types of potential benefit, for such things as habitat complexity and benthic biodiversity are allowed to stray liberally from the EFH rule, venturing into habitat condition and "health" indices the analysis does not even attempt to link to the EFH provisions of the MSA. For these habitat condition indices, Chapter 4's analysis essentially states there is no information available to assess the effects of alternatives. Further, much of Chapter 4's discussion of these qualitative effects on habitat raises issues with the meaning of or magnitude of the LEI scores in appendix B, suggesting alternative explanations for the LEI model outputs. The analysts discuss "habitat complexity" in Chapter 4 and clearly stress the importance of this measure of effect in terms of principles of benthic ecology, but then make no concrete case for how habitat complexity relates to the EFH rule or the stated goals and objectives of the Council's EFH alternatives.

While there may be some habitat benefit from the alternatives in terms of complexity and biodiversity, assignments of positive effects to some of the alternatives and not others appears inconsistent – these assignments are essentially speculative at best. Selected examples of inconsistencies and other reasons why positive effects ratings for measures of positive habitat effects are provided in detail below.

Recommendation: Overall, we find frequent instances where ratings of "unknown" ("U") effect would have been more appropriate. We suggest frankly admitting there is little demonstrable proof for these categories of positive effects associated with habitat complexity and benthic biodiversity that are not linked to the EFH rule itself.

In addition, we have real concerns with the way the analysis attempts to relate the fishing effects scores to the social and economic effects analysis in Appendix C. All of the systematic and quantitative information in Chapter 4 comes from the technical appendices, such as fishing effects scores and assessment of effects on managed species at critical life stages developed in Appendix B, and the social and economic effects analysis in Appendix C. Chapter 4 applies perspectives from benthic ecology and ecosystem management to quantitative information which, in many cases, were applied as comments on the LEI scores developed in Appendix B. In applying this ecosystem and benthic ecology perspective in a summary and the comparison of

effects section, rather than as a stand-alone part of the analysis, little in the way of rigorous explanation of methods and assumptions is presented.

All of these effects categories have different units of measure. Some are in annual gross revenues in dollars, some are in long-term expected effects in "ecosystem terms," and still others are related to how closely the groundfish stocks might be expected to stay above MSST or other groundfish stock size thresholds. In the end, there is no articulation of a common metric for the reader to use to make a rigorous assessment or comparison of all this information. Hence, the reader, at best, faces reams of raw data and is likely reduced to looking for data points he or she finds persuasive for his or her own position. We find it hard to fathom how this array of disparate information helps inform the public of the real consequences of the proposed alternatives, because many, if not most, of the different types of effects are largely incomparable.

Despite this, Chapter 4's assertion of ecosystem benefits from habitat complexity and benthic biodiversity appears to be an attempt to balance these factors against socioeconomic costs of alternatives identified in Appendix C with little or no quantitative supporting information. This ad-hoc attempt to set up a qualitative practicability argument results in erroneous conclusions pointing to increasing costs to the fishing community and benefits to habitat and the ecosystem of Alternatives 3-6, yet all alternatives are deemed practicable. The assignments of rankings for indices of the habitat and ecosystem welfare are thinly supported methodologically in Chapter 4 and elsewhere and, as is pointed out below, questionable assumptions are made in the expectation of these effects and benefits, replete with inconsistencies and analytical selectivity in their assignment and application and inappropriate attempts to combine different types of effects.

Recommendation: Overall, we believe the case for habitat complexity, diversity, and ecosystem benefits of the alternatives should be made explicitly according to conventions of the scientific presentation of information. Failing this, all suggestions and speculation about habitat benefits of the alternatives should be set aside from Chapter 4, the tables comparing effects (ES 6-7), and from the discussion of practicability.

When it comes to the areas where most people would want a definitive judgment as to whether the expected costs to fishermen, processors, consumers, and fishing communities would be justified by the long-term benefits in terms of maintenance of or increases in fish yields (or non-market benefits, such as passive use), we find instead discussions of theoretical indices of habitat condition without any attempt to relate them to the EFH mandate. The analysis admits in literally dozens of places that basic scientific information on the extent of habitat, its function, and its condition is largely lacking and the relationships between fishing effects and productivity of stocks are poorly understood. The numbered comments below are specific illustrations of problems we find with the explanation of effects of mitigation alternatives, and particularly with the assessments made for the specific habitat and ecosystem categories of effect.

Dr. James W. Balsiger
April 15, 2004

Specific Comments on Chapter 4's assessment of effects:

1. Even granting the relevancy of largely unsupported expectation of benefits of benthic biodiversity and habitat complexity, Chapter 4's premise that habitat effects are positive via GOA Alternatives is questionable and should be subjected to rigorous review The EFH DEIS' approach assumes that trawling necessarily reduces benthic biodiversity and habitat complexity. Under this assumption, alternatives were fashioned within the DEIS for fisheries and areas with relatively high LEI scores. These were developed mostly to close off portions of habitats showing relatively high LEIs. But the premise that there are necessarily benefits from these alternatives should be examined carefully. It seems obvious that in the absence of restrictions, trawling (and all fishing) would tend to occur in areas with the highest catch rates per unit of effort (CPUE). So, alternatives that shift effort from where fishing presently occurs to new areas will likely move fishing into areas that are relatively unfished compared to where it now occurs. Secondly, because most of the habitat effects of trawling as discussed in the scientific literature and as modeled in Appendix B occur when an area is first fished, a reasonable expectation is that fishing new areas would increase effects relative to status quo.

   This increase in habitat effect might even be more than proportional if target groundfish catch rates are lower in the new areas if lower catch rates mean more effort is needed to catch the same amount of target groundfish (Duplisea *et al.*, 2003). Thus, in the simplest example within the set of EIS mitigation alternatives where Chapter 4 finds habitat and ecological benefits in the category of "benthic biodiversity" under GOA Alternative 3, the alternative would prohibit bottom trawling on the GOA slope with the expectation of positive habitat effects. But if bottom trawling is an economically viable way to catch Pacific ocean perch (POP) and other gears are not as viable, then by closing the GOA slope to bottom trawling, bottom trawling for slope rockfish species may actually relocate to off-slope areas with depths suitable for POP and other rockfish. Presently, approximately one-half of the GOA slope rockfish catch is taken in areas that are not actually on the GOA slope feature as defined in Alternative 3 (see Appendix C analysis).

   Additionally, fishermen with experience in the GOA rockfish fishery doubt the rockfish catch now taken on the slope could be made up in the existing set of known fishing locations off the GOA slope where rockfish fishing occurs. So the fleet could, under Alternative 3, have incentives to explore new fishing grounds off the GOA slope, and those new areas could have lower CPUEs for slope rockfish, meaning the end result of the alternative could well be a net increase, rather than the expected decrease, in benthic biodiversity effect in contrast to what the EFH analysis claims would occur.

   Recommendation: The discussion of potential effects for habitat should be reconciled with the arguments above that such benefits may not be attained. Ratings of positive effects for benthic biodiversity and habitat complexity for the GOA EFH alternatives should be changed to U.

2. Chapter 4's premise that habitat effects are positive via BSAI alternatives is questionable and should be subjected to rigorous review. As is discussed below, the same is true of BSAI alternatives that would close portions of areas presently being fished. Those alternatives, however, include an "open areas" component aimed at preventing the redistribution of effort to areas that are fished less intensively or un-fished areas. But the "open area" concept as constructed in the EFH mitigation alternatives assumes all of the area in the "open area" has been fished, or is fished to the same degree as the area where the new no trawl restriction are being proposed, or has the same CPUE as the area proposed for closure. Based on the industry's practical experience, each of these assumptions is questionable. Further, the Geographic Information Systems (GIS) data and use of haulback locations to assign fishing activities spatially in the EFH EIS analysis is not accurate in terms of the scale at which fishing occurs and the actual spatial conduct of the trawling. Some of the EFH EIS figures depicting fishing effort on charts generate the impression that the open area is fished in its entirety and at a uniform intensity. But fishermen with experience in the AI, for example, have commented during the EFH EIS process that fishing occurs in a very patchy fashion, due to the need to avoid unfishable bottom, and because fishermen tend to return to areas they have towed in the past.

   The question of whether a more-than-unit amount of fishing effort would be needed to collect the same amount of catch in the new locations within the "open area" is an issue as well. A scientific paper published by Duplisea, *et al.* (2003), cited in the PSEIS, illustrates a North Sea example of a case where well-intentioned trawl closures of heavily fished areas may have resulted in more habitat effects than no closure at all. The AI Alternative 5b attempts to counter this possibility by reducing the Total Allowable Catch (TAC) along with the creation of an open area approach. Even with the TAC reduction proportional to the percentage of the reduction in historically fished areas allegedly identified as having relatively high coral bycatch rates, there is no way to ensure fishermen displaced from traditional fishing areas will move into existing fishing areas within the remaining "open area". The potential that effort shifts could reduce the expected benefits of Alternative 5b for the AI is described in the EA/RIR (Appendix C, p. C-80) analysis reports: "Alternative 5b would produce a complicated patchwork of open and closed areas, depending upon coral/sponge bycatch rates that may change from year to year. This may require fishermen to alter their normal fishing areas and possibly explore new fishing grounds on an annual basis."

   Recommendation: Appendix C's recognition of the potential for the AI Alternative 5b to push fishing into new areas within the "open area" should be recognized in Chapter 4, and the discussion of potential benefits should be reconciled with Appendix C's findings and the points made above. Ratings of positive effects for benthic biodiversity and habitat complexity for the BSAI EFH alternatives should be changed to "U."

3. Subjective use of the Appendix B model results for supporting alternatives that close more area to bottom trawling. Judgments made on "habitat complexity" and "benthic biodiversity"

are inconsistent, highly subjective, and generally biased toward assigning positive effects in these categories to alternatives that would close more area to bottom trawling. For instance, Chapter 4, Section 4.3.2.1 (starting on p. 4-54) advises the reader not to interpret LEI scores from the Appendix B model at their face value percentages of habitat features reduced at equilibrium. The discussion then asks the reader to consider Appendix B model results may understate effects as long-lived habitats such as corals may actually be more patchy than was assumed in the model. Therefore, the analysis argues, the scores "should not be taken at face value." Later on, however, in discussing the need for the alternatives that close new areas to trawling, such as Alternatives 5a and 5b, the discussion of expected habitat complexity benefits is based mostly on the large magnitude LEI scores for the areas and habitat features covered in those alternatives. The caveats about the validity of model estimates are no longer presented in the discussion of how the model results apply to Alternatives 5a and 5b. All this is subjective and appears biased. If the model is a poor indicator of status quo effects, as was pointed out in the discussion of Alternative 1, then the model's results for new alternatives should be even more questionable, because the utility of any model to predict expected outcomes cannot be better than its ability to describe the status quo condition or level of effect.

Recommendation: Do not selectively accept, reject, discount, or applaud Appendix B model results based on a desired outcome for a particular mitigation alternative. Assign ratings of "U" for effects in the categories of "habitat complexity" and "benthic biodiversity," because the positive ratings as assigned are highly subjective.

4. Arbitrary trigger used in effect rating for benthic biodiversity and habitat complexity
Mitigation Alternative 2 would close 11 areas on the GOA slope feature to bottom trawling for slope rockfish, and Alternative 3 would close the entire slope feature to bottom trawling for slope rockfish. The only difference between these alternatives is essentially that a larger fraction of the GOA slope is closed to bottom trawling for slope rockfish in Alternative 3 than for Alternative 4. But in terms of rating of effects, Alternative 2 scores a "0" in terms of "habitat complexity and "benthic biodiversity" but an "E+" in the same category for Alternative 3. There is no explanation of what is a scientifically acceptable threshold to trigger a positive or neutral effects rating. Judgments appear to be arbitrary.

Recommendation: Given the lack of scientific basis to support ratings in the habitat complexity and benthic biodiversity categories, ratings of "U" are the most appropriate, as was done for groundfish under the "target species" category. Alternatively, the threshold for triggering a positive effect needs to be thoroughly explained, supported scientifically, and consistently and fairly applied. Further, analysts would have to support scientifically, in the example cited below, the rationale for rating Alternative 3 effects as positive for indices of habitat condition while assigning "no effect" to Alternative 2, where a fraction of that entire area closed to the same set of trawl activity does not generate the same directional response.

5. Tendency to accept model results regarding benefits of additional closed areas but reluctance to accept model results pertaining to the benefits of gear modification alternatives. Chapter 4 (pp. 4-133-134) reports the results from the Appendix B model for the BS gear modification portion of Alternative 4 (requirement to install rubber discs of a certain size and spacing to lift trawl sweeps off the seafloor). The model results show this gear modification would be expected to reduce effects to habitat features such as slope habitat (15% reduction) and sand/mud (17% reduction). Chapter 4 then claims if "that level of mortality reduction were confirmed, this would have a positive effect." The Chapter 4 analysis then discounts these potential benefits as "conceptual and speculative" and states such benefits would require "testing before implementation." While we concur these benefits of EFH mitigation alternatives are largely conceptual, we fail to see how the benefits of gear modification alternatives are any more speculative than any other estimated reduction in fishing effects as a result of EFH mitigation alternatives as described by the model results. We have raised legitimate issues with the assumptions made for expected habitat benefits of closed area alternatives above. We further concur it is a good idea to confirm potential benefits of gear modification prior to implementation, but we think this recommendation applies to all the EFH mitigation alternatives, so that reasonable information should exist before presuming benefits.

   Recommendation: Either accept the model's projected reduction in habitat effect for the gear modification and apply the caveats of the results across all the Appendix B model projections, or apply the same standard of requirement for verification that the intended effects of alternatives be confirmed prior to implementation of any new habitat protection measures.

6. The discussion of "passive use" and "productivity of FMP species benefits" are grouped in the Chapter 4 analysis and then productivity of managed species is dropped from the Executive Summary tables altogether "Passive use" and "productivity benefits" are discussed throughout Chapter 4 under a heading "Effects on the Fishing Fleet: Passive Use and Productivity Benefits" for each alternative. In our opinion, these are two very different indices of potential effects of EFH mitigation alternatives, yet they appear awkwardly "married" into a single category in the EFH EIS Chapter 4 analysis. Without fail, the Chapter 4 analysis finds that any alternative closing new areas to trawling is expected to create additional "passive use" benefits, at least for the portion of the human population that might perceive of benefits from preventing human activities in portions of the environment. This is a very distinct issue from "productivity benefits," which evaluates the possibility that EFH measures could increase or at least help maintain yields of target fisheries. In the case of "productivity benefits," the discussion in Chapter 4 simply reports there is no information to link EFH and the productivity of FMP species. So, by linking these two very different types of potential effects into one category, the analysis reports positive rankings ("E+"), when the positive expectation applies only to the passive use consideration. This makes the marriage of effects on productivity and effects in terms of passive use incongruous, because the Chapter 4 text appears to suggest there are positive effects ("E+") for productivity of FMP species for

all the alternatives save status quo. As an example, refer to Section 4.3.6.1 "Effects on the Fishing Fleet: Passive Use and Productivity Benefits E+" (p. 4-185).

Recommendation: Discuss "passive use" separately from productivity benefits. Productivity effects should be reported in a separate category even if a score of U is assigned each mitigation alternative in this area because this in itself is an important finding. Additionally, "passive use" does not seem to belong under the rubric "Effects on the Fishing Fleet" as it appears in Chapter 4, and should probably be moved to some other heading. Lastly, productivity effects of EFH measures has been dropped from Tables ES 6-7 in the Executive Summary and this important potential area of effect, even if its discussion in Chapter 4 results in a consistent finding of U, should be reported in the Executive Summary.

7. Non-sequitur reasoning for failing to find positive "benthic diversity" effects from Alternative 2. The discussion of diversity effects in Chapter 4 bases its conclusions mainly on the fact the proposed closed areas on the GOA slope would not protect corals in the AI. The analysis of "diversity" effects of Alternative 2 on p. 4-107 concludes: "Functional (structural habitat) diversity could increase in the GOA if the bottom trawl closures overlay with coral distribution there but the alternative would have no affect [sic] on structural habitat diversity in the AI, where most hard coral are found." We feel it is simply not legitimate or logical to judge the merits of an alternative designed to address a GOA issue alone.

   Recommendation: Reconfigure conclusions to apply only to the areas analyzed.

8. Assessment of enforcement effects for all EFH mitigation alternatives. Chapter 4's discussion of enforcement effects appears to hinge on the ability to draw simple, largely rectangular boxes around a manageable number of closed areas rather than a multitude of different fishing restrictions area with different sizes and shapes or, possibly, restrictions based on depth contours. The discussion then evaluates the practicality of enforcement based on aircraft fly-overs or other *in situ* means of observing potential incursions versus the potential for a requirement that vessels be equipped with a vessel monitoring system (VMS). This discussion appears to overlook the fact that unless the closed areas are designated as no entry zones (a separate issue of potentially huge consequence for vessel safety, etc.), an enforcement issue that merits evaluation is what technical or observer coverage needs would be required to adequately determine whether vessels engaged in fishing while inside the restricted areas. Costs associated with the development, purchase, and use of monitoring system that could be used in conjunction with VMS to verify whether the vessel was engaged in fishing while in the restricted area is a significant matter for the analysis of enforcement costs and practicability.

   Recommendation: Add a discussion and cost estimates of a mechanical system or observer coverage level to determine whether a vessel was engaged in fishing in any of the proposed EFH closed or gear-restricted fishing areas. Additionally, the costs, practicability, and safety

trade-offs associated with "no entry" designations for any EFH restricted areas should also be discussed.

9. Analysis of Aleutian Islands portion of Alternative 5b appears to ignore the analysis' caveats relative to using NMFS observer data for assessing coral bycatch. Chapter 4's (pp. 4-232-233) provides a lengthy discussion of the problems with attempting to extrapolate observer data on coral catches from observer data designed to estimate catches of common fish species, and not coral or other invertebrates. The NMFS Observer Program has, in the past, stressed that observer basket sampling for rare species of fish has severe limitations. The Chapter 4 discussion (cited above) points out that the same limitations exist for basket sampling and extrapolation of coral bycatch. Overlooking the points brought out about observer data on corals, the discussion of habitat complexity and benthic biodiversity for Alternative 5b appears to accept the Alternative 5b's premise that these benefits would result from keeping the fisheries inside the "areas that have recently been productive" plus a set of "additional areas where higher bycatches of biostructure species have occurred due to bottom trawling (p. 4-198)."

   Recommendation: The analysis should carefully examine expected benefits in terms of coral protection and, hence, complexity and diversity to evaluate if such expected benefits for Alternative 5b are legitimate and are a reasonable expectation given the limitations of observer data used to identify the areas for closure.

COMMENTS ON THE CUMULATIVE EFFECTS ANALYSIS

Habitat Complexity and Ecosystem Biodiversity of Mitigation Alternatives

The cumulative impacts assessment of the various alternatives seems flawed in its incorporation of net benefits to benthic biodiversity, habitat complexity, crab species, and ecosystem diversity as summarized in Table ES-6 and discussed in Section 3.4.3 and the Cumulative Impacts 4.4 section. Specifically, the MCA is troubled by the benefit ratings given to Alternatives 3-6 for these categories. The beneficial ratings in these categories: 1) are based on literature reporting on work done elsewhere in the world, a single study in the BS and a single study in the GOA; 2) focus on benthic megafauna only, especially sedentary taxa such as sea stars and gastropod shells; 3) are not linked in any way to the productivity of the managed species, except to say impact is likely small to overall crab populations; and 4) do not account for negative impacts to the same megafauna or managed species if fishing effort is shifted to areas of reduced CPUE, forcing effort to increase.

Recommendation: The impacts of proposed mitigation alternatives on benthic biodiversity, habitat complexity, crab species, and ecosystem diversity should be eliminated, revised to U, or properly substantiated and linked to impacts of managed species, including consequences of shifting fishing pressure to new areas.

Economic Costs of Mitigation Alternatives

The cumulative impacts analysis determines there will be no substantial change in revenues to the fishing fleet or processing sector expected under Alternatives 1 and 2. The analysis states the extent of the negative impact caused by reduced harvests and increased operating costs cannot be measured at this time, but, nonetheless, grossly underestimates what those costs might be. Additionally, the estimates are done at levels that look at overall impact to all participants and ignore the disproportionate impact to individual sectors that may be much more invested in fisheries directly affected by proposed closures than others. The problem with this approach is it impacts the determination of whether an alternative is "practicable" or not, which is required under consideration of EFH measures. While a proposed alternative might be practicable to fishermen or whole sectors that do not rely on that area for harvests, it might be totally non-practicable to those that do.

Recommendation: The economic impacts of the mitigation alternatives should be revised to more accurately assess impacts on gross revenues and operational costs and be better tailored to determine impacts to specific participants and communities.

COMMENTS ON THE METHODS AND DATA USED TO ASSESS ECONOMIC IMPACTS AND IMPLEMENTATION/ENFORCEMENT COSTS IN THE EA/RIR

An overriding concern from the MCA's perspective is the EFH DEIS states in Chapter 4 the EFH mitigation Alternatives 2-5 can be expected to have positive effects in terms of benthic biodiversity and habitat complexity while at the same time imposing relatively minimal socioeconomic effects on the sectors that catch and process fish as well as communities and related businesses. Appendix C (the EA/RIR), however, comes to a distinctly different conclusion. Specifically, the economic analysis in Appendix C states we can expect measurable negative social and economic effects from Alternatives 2-6. At the same time, Appendix C points out that there could be some potential positive effects related to habitat protection in terms of passive use, non-consumptive use, and other indices of non-market value associated with preservation of habitat resources. But Appendix C is quite clear in distinguishing these types of potential benefits to habitat from the EFH mandate where the linkage to benefits to FMP species is required in order to attempt to weigh such benefits against the estimated costs of proposed EFH alternatives.

Appendix C, in fact, finds there is no evidence to demonstrate such a linkage or that these potential benefits exceed the cost to those who draw their livelihoods from the resource and consumers. Whether it is quantitatively or qualitatively determined, the essence of benefit/cost analysis, whether formal or informal, is that properly discounted benefits must exceed costs in order for a determination of positive net benefits to result. Table 3.9-1, entitled "Comparative Summary of Benefits and Costs of Alternatives 1-6," concludes as to the expected conservation effects of status quo habitat measures under Alternative 1:

"Based upon best available scientific information, existing habitat conservation measures appear sufficient to sustain FMP stocks at present abundance levels"

The MCA agrees with this conclusion. The detailed comments below focus on some concerns we have about the EA/RIR's analysis of economic effects and assessment of implementation and enforcement costs in the EFH EIS:

1. For GOA alternatives, inappropriate comparisons between expected reductions in revenues. The MCA recognizes shoreside revenue data for unprocessed fish are collected from fish tickets based on ex-vessel transactions for purchases of unprocessed fish from catcher vessels. At the same time, reporting the expected annual gross revenue forfeitures (revenues at risk) in terms of first wholesale revenues for the at-sea processing sector and only the ex-vessel revenue loss for the shoreside delivery vessels understates the overall expected losses to fishermen and processors. Given analysts clearly have access to data on first wholesale price per ton for the at-sea sector at least, we feel it is appropriate for the analysts to use at-sea first whole prices to estimate first wholesale shoreside revenue losses. Once this is done (with appropriate caveats to explain how shoreside revenues for process fish were obtained), the discussion and tables will not only present information that will allow "apples to apples" comparisons of effects on different sectors, but also actually estimate the total revenue effects on affected fishing and processing sectors and communities.

2. Assumptions about the industry's ability to make up slope rockfish revenues by fishing in areas not part of the GOA slope or by using alternative fishing gear
For the catcher vessel (CV) fleet, data are not available to assign catch loss by haul location since virtually the entire fleet is 30% observed. Instead, the analysis uses CV catch by statistical area based on Alaska Department of Fish and Game fish ticket information to determine the amount of catch from less than and greater than 200 meters (m). Where the GOA slope feature covers a portion of a statistical area, direct proportionality is assumed to predict effects on catches and "revenue at risk" for that statistical area. This methodology could greatly underestimate the amount of catch attributable to the GOA slope area that would no longer be open to bottom trawling, because the entire harvest for any particular statistical area could have actually come from the geographic portion of the statistical area that is greater than 200 m deep.

   For the catcher-processor (CP) sector, revenue at risk estimations were based on observer information, where individual tow location and catch composition was used to estimate the amount of affected catch. The analysis bases its conclusions on the percentage of observed catch attributable to hauls with haulback positions less than 200 meters. This assumption may not be viable because observed haulbacks that record a position with a corresponding depth of less than 200 m may have involved fishing at depths greater than 200 m. The sharp depth contours of the GOA slope nearly guarantees that fishing changes depth within individual tows. Additionally, the analysis suggests

that fishing for slope rockfish can make up at least a portion of the revenues at risk and associated other species that have traditionally been caught in conjunction with slope rockfish with pelagic trawl gear, or fixed gear, or by fishing with non-pelagic trawls in areas off the GOA slope.

All these assumptions are questionable and, thus far, there is no evidence these are viable strategies. At present, there is no known viable fixed gear to use and very few areas of the GOA slope are known to have sufficient concentrations of slope rockfish that can be found sufficiently "off bottom" (at certain times) to allow fishermen to use pelagic-style nets. In addition, many valuable species in the GOA slope complex have never been feasibly harvested with pelagic trawl gear. Lastly, while some fishermen fish for rockfish and associated species with non-pelagic trawls in area not considered to be on the GOA slope for the GOA EFH alternatives, areas available to accomplish this are very limited. If all fishery participants attempted to recover revenues in these limited areas, crowding externalities and grounds pre-emption issues would likely diminish the prospects of success.

3. Economic impacts on affected participants need to be evaluated in a meaningful context. The EA/RIR would be greatly improved if it provided a more appropriate context for the expected revenue effects of measures. For instance, wherever an estimated revenue forfeiture is described in the analysis, the text or table should consistently label it as the expected loss on an annual basis. At present, the "revenues at risk" in tables fails to point this out and some readers may unwittingly conclude that such a loss is a one-time loss. It should be made clear to readers the expected loss is actually a stream of discounted future expected revenue forfeitures. Furthermore, the EA/RIR currently attempts to place revenue losses in the context of the overall revenue for all vessels with fishery sector based on the sector's cumulative catches in all management areas. We feel this is not necessarily an appropriate context because, for instance, not all head-and-gut (H&G) vessels that fish in the GOA also fish in the BS or AI and vice versa. This is because some operations are just GOA or AI dedicated operations, some do not have LLP endorsements for other management areas, and some simply do not have the experience or means to participate in the cumulative set of fisheries where H&G vessels participate. The same is true for some CVs that participate in GOA rockfish fisheries.

For evaluating the effects on each affected sector, we feel a more meaningful context is perhaps to report the percentage of annual revenue at stake for affected vessels in proportion to the gross annual revenues for the affected vessels for each proposed alternative. For instance, for GOA CVs or H&G vessels affected by Alternative 3, it would be more instructive for decision makers to know how important the revenues from that fishery affected by the management alternative are in terms of the annual revenues for those affected vessels. This way, managers would have information that there are, for example, 25 vessels affected by the alternative and the revenues at risk amount to a given estimated percentage of the overall revenue those vessels produce on an annual basis. In

this context, we feel the Council and the public would have a better indicator of the expected impacts on the subset of vessels affected by each alternative.

4. Determinations of no community impacts are misguided. It appears the analysis defines dependent community as the portion of the fleet that owns or operates fishing vessels out of a particular community. We feel the criterion for identifying a fishery-dependent community needs to be broadened to include the labor involved in fishing and processing as well as those people involved with the various direct and indirect support sectors such as fuel and parts providers, shipyards, insurance and accounting providers, etc. The analysis correctly identifies Kodiak as the most likely to be impacted of the GOA shoreside communities affected by GOA alternatives. Possibly due to the omission of consideration of impacts on the shoreside processing sector and failure to properly account for all revenue impacts of GOA alternatives, conclusions of "no community impacts" as a result of the GOA mitigation alternatives were made. This seems absurd given that representatives of Kodiak have repeatedly commented during the development of the DEIS that slope rockfish is a very important component of their community's tax base and seasonal labor flow. The community wanted to make it clear that Kodiak's ability to keep a year-round labor force depends on the rockfish fishery.

   For the at-sea sector, the analysis simply concludes that Seattle has too much economic activity and too many people relative to the estimated impacts, hence there are no effects on communities. In reality, the affected people are the CP owners and their employees who operate their businesses mostly out of the Ballard/Fishermen's Terminal area on Seattle's waterfront. This is actually a very definable community with dozens of fishing and marine dependent service businesses. These businesses cannot readily redirect their investments into the high-tech oriented economy of Seattle because their capital investments are neither liquid nor malleable. Furthermore, their employees cannot be expected to join the ranks of companies such as Boeing or Microsoft because their fishing industry training and skills are largely not transferable. Most of all, the Ballard/Fishermen's Terminal community is not so large as to not feel the impacts of the EFH alternatives. When a CP business fails, the community in that portion of Seattle's waterfront is impacted. Additionally, most of the H&G vessels spend more than eight months per year in Alaska, so a significant portion of purchases of supplies, parts, fuel, and in-season repairs are made in Alaska, most often in Dutch Harbor, Kodiak, Adak, and Seward.

5. Both enforcement costs and practicability of compliance need to be discussed in Appendix C. The discussion of enforcement cost in Appendix C appears to have been greatly improved between the first draft that the Council family was provided an the actual draft sent out for public comment. Notwithstanding these improvements, some important additional considerations need to be addressed. The current discussion of enforcement and management costs is a good start at describing the complexity and cost of management and enforcement of closed areas based on bathymetric contour lines and

literally dozens of open area boxes that may undergo modification from year to year, based on coral bycatch caps and other factors. The issue here is as much one of enforcement costs as well as the difficulty and imposed costs on fishermen seeking to comply with such a matrix of new restrictions.

Along these lines, the discussion of enforcement issues appears to overlook the important point that enforcement cannot expect all these new lines to be no transit zones, because this would be completely impractical and might even be a safety problem for vessels attempting to rapidly return to port to find some respite from bad weather. So the real enforcement cost and practicality issue would be to come up with a feasible means to make a determination that the vessel was actually engaged in fishing while in the non-linearly shaped zones or menagerie of open area boxes. This would either require observers who somehow know when the vessel has entered one of the no trawl areas so that the observer can then determine whether the vessel is fishing or not, or a mechanical system to work in conjunction with the vessel's Vessel Monitoring System to accurately determine if the vessel was engaged in fishing. While the latter approach seems more promising, determination of whether the vessel was at towing speed while in the closed area will not be adequate because many vessels, particularly at-sea processors proceed at towing speeds while processing of fish from previous tows is occurring and with no fishing gear in the water.

6. Analysis correctly points out revenue losses are only one aspect of effects and costs because alternatives may also reduce the fleet's ability to find low bycatch areas, create new gear conflicts, affect adjacent fisheries, and create safety problems. The EA/RIR's discussion starting on page C-32 and continuing through C-36 is very informative regarding additional effects on our ability to meet existing management objectives on bycatch reduction, safety, and minimization of conflicts and affects on adjacent fisheries. These often-overlooked associated effects are very important and probably as important as the habitat management objectives driving EFH EIS. The MCA applauds the analysts' attempt to bring these issues to light, and we recommend that the discussion of these issues be expanded in the EA/RIR as well as amplified and elevated in the Chapter 4 assessment of effects of the proposed alternatives.

COMMENTS ON APPENDIX B: THE HABITAT EFFECTS MODEL

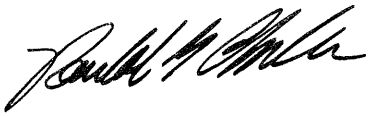
The habitat effects model in Appendix B is a pioneering analytical attempt to link the effects of fishing on EFH to the long-term sustainability of Alaska's managed groundfish species. We believe the analysts did a reasonable job assessing effects and attempting to evaluate linkages at all critical life stages for managed species. For this, we applaud the NMFS' solid effort to systematically evaluate habitat effects in the context required by the EFH mandate. Given the state of the art for scientific work in this area, this is no small accomplishment, especially considering the paucity of hard data and outright lack of similar analytical work to use as

technical guidance. The analysis is appropriately candid in acknowledging the methodologies are clearly still in development. As the text often explains, NMFS had to rely at times on proxy data to take the place of more appropriate data, because those more suitable data were simply not available.

The model and analysis presented in Appendix B is a work in progress. Our detailed comments and recommendations on Appendix B are presented in Attachment 3.

Thank you for the opportunity to comment. In conclusion, the MCA believes the analysis strongly supports the PPAs selected by the Council and the Agency. Even so, the analysis can be improved. Our comments focus on concerns with the analysis and make recommendations to strengthen the final documents. We look forward to working with you as this important process continues.

Sincerely yours,



Ronald G. Clarke
Executive Director

Attachments (3)

Cc: Ms. Stephanie D. Madsen, Chair
North Pacific Fishery Management Council

Mr. Chris Oliver, Executive Director
North Pacific Fishery Management Council